



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,842	02/18/2004	Jong Woo Kim	041501-5551-01	9434

30827 7590 01/22/2007
MCKENNA LONG & ALDRIDGE LLP
1900 K STREET, NW
WASHINGTON, DC 20006

EXAMINER

DUDEK, JAMES A

ART UNIT	PAPER NUMBER
----------	--------------

2871

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/779,842

Applicant(s)

KIM ET AL.

Examiner

James A. Dudek

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/21/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/06.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Rejection Status

The previous first action final rejection was improper as explained by Applicant. Accordingly, the final status of the rejection dated 9/21/06 is withdrawn. As the claims have been amended, a final rejection follows. The Examiner apologizes for any inconvenience this caused Applicant.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over 608 in view of US 5511591 A (591).

Per claim 1, 608 teaches a method of fabricating a liquid crystal display device, comprising: preparing first and second substrates having an active area [display area] and a dummy area [off-display area]; forming at least one first column spacer on the active area on the second substrate [spacers 33 formed in display area]; forming at least one second column spacer in the dummy area on the second substrate [spacers 33 formed in off-display area]; forming a sealant in a periphery of the active area of the second substrate [seal 37, periphery

Art Unit: 2871

being that area outside and surrounding the display area]; and bonding the first and second substrates to each other [see figure 1] and wherein forming a liquid crystal layer comprises dispensing a liquid crystal on one of the first and second substrate.

608 lacks the step of dispensing a liquid crystal on one of the first and second substrate prior to the bonding of the first and second substrates to each other. However, 591 teaches dispensing the liquid crystal onto a substrate prior to bonding the substrates. 591 teaches reduced costs and increase quality at column 1, lines 36-49 as a benefit of using 59's dispensing methods. *Accordingly, it would have been obvious to one of ordinary skill at the time of invention* to combine the dispensing of 591 with the method of 608.

Per claim 6, 868 teaches the method of claim 1, further comprising forming at least one third column spacer outside the active area of the second substrate [spacer 33 in off-display area]

Per claims 9-10, 868 teaches the method of claim 1, further comprising forming a liquid crystal layer between the first and second substrates [LC 40].

Per claim 11, 868 teaches the method of claim 1, further comprising forming a sliver pattern in a periphery of the active area of the first substrate [the sliver paste, see column 1, lines 55-63].

Per claim 15, 868 teaches the method of claim 1, wherein the first column spacer is formed on the wiring part of the first substrate [see figure 1 and gate 12].

Per claim 16 and 17, 868 teaches the method of claim 1, further comprising: forming a black matrix [36] and a color filter layer [32] on the second substrate; and forming an overcoat layer on the color filter layer [34].

Claim 18 is inherent.

Per claim 19, 608 teaches the step of forming a dummy color filter layer on the periphery of the active area of the second substrate [the spacers 33 are formed from color filters.]

Per claims 2-3, 5 and 8 608 teaches the method of claim 1, but lacks the sealant formed of an organic photo-hardening sealant. However, it was well known to use mixtures of organic photo and thermo hardening seals to ensure a tight seal. Accordingly it would have been obvious to one of ordinary skill at the time of invention to combine the well known photo/thermo seal with 608.

Per claims 4 and 7, 608 teaches the method of claim 1, but lacks the first and second column spacers are about 5 to 30 microns in width. However it was a matter of design when choosing the width. If the width is smaller, then the aperture increase and more light will pass. But the space accuracy will decrease. On the other hand, if the width is increased less light will pass, but the space accuracy will increase. It would have been obvious to one of ordinary skill at the time of invention to choose a width between 5 and 30 microns.

Per claim 12, 608 teaches the method of claim 1, but lacks the steps of bonding the first and second substrates to each other includes: loading the second substrate on an upper stage of a bonding machine to face into the first substrate; loading the first substrate on a lower stage of the bonding machine; evacuating a chamber of the bonding machine; aligning the first and second substrates; and attaching the first and second substrates to each other. However, if not explicitly taught each of these method step are well known in the art to ensure proper gap spacing and alignment using an efficient method. Accordingly, it would have been obvious to one of ordinary skill at the time of invention.

Per claim 13, 608 teaches the method of claim 12, but lacks the step of venting the chamber to an atmospheric pressure to press the attached substrates by difference between an inner pressure of the bonded substrates and the atmospheric pressure and applying a UV-ray to the attached substrates to harden the sealant. However is was also well known to create a vacuum of at least one atmosphere to apply pressure on the substrates and use UV light to harden the seal to ensure the liquid crystal is seal properly. It would have been obvious to one of ordinary skill at the time of invention.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Response to Arguments

Regarding the argument addressing the new limitation, they are moot due to the new grounds of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Dudek whose telephone number is 571-272-2290. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on 571-272-1787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


James A. Dudek
Primary Examiner
Art Unit 2871